

**CLAIMS**

1. An optical fiber comprising a core region extending along a predetermined axis, and a cladding region provided on an outer periphery of said core region and mainly comprised of silica glass, said optical fiber having:

a cable cutoff wavelength of 1260 nm or less;

a transmission loss of 0.32 dB/km or less at a wavelength of 1310 nm; and

10 a OH-related loss increase of 0.3 dB/km or less at a wavelength of 1380 nm.

2. An optical fiber according to claim 1, wherein the transmission loss at the wavelength of 1310 nm is 0.30 dB/km or less.

15 3. An optical fiber according to claim 1, wherein a transmission loss at the wavelength of 1380 nm is lower than a transmission loss at the wavelength of 1310 nm.

20 4. An optical fiber according to claim 1, wherein a difference between a transmission loss at a wavelength of 1550 nm and a transmission loss at the wavelength of 1310 nm is 0.13 dB/km or less.

25 5. An optical fiber according to claim 1, further having a zero dispersion wavelength of 1300 nm or more but 1324 nm or less.

6. An optical fiber according to claim 1,

further having a polarization mode dispersion of 0.5 ps/km<sup>1/2</sup> or less at a wavelength of 1550 nm.

7. An optical fiber according to claim 1, further having a bending loss of 3 dB/m or less in a 5 bending diameter of 20 mm at a wavelength of 1550 nm.

8. An optical fiber according to claim 1, further having a Petermann-I mode field diameter of 10.0  $\mu$ m or less at a wavelength of 1550 nm.

9. An optical fiber comprising a core region 10 extending along a predetermined axis, and a cladding region provided on an outer periphery of said core region and mainly comprised of silica glass, said optical fiber having:

a cable cutoff wavelength of 1260 nm or less;

15 a mode field diameter of 9  $\mu$ m or less at a wavelength of 1310 nm; and

a dispersion slope of 0.055 ps/nm<sup>2</sup>/km or less at a wavelength of 1550 nm.

10. An optical fiber according to claim 9, 20 further having a chromatic dispersion of 16 ps/nm/km or less at the wavelength of 1550 nm.

11. An optical fiber according to claim 10, wherein the chromatic dispersion at the wavelength of 1550 nm is 15 ps/nm/km or less.

25 12. An optical fiber comprising a core region extending along a predetermined axis, and a cladding

region provided on an outer periphery of said core region and mainly comprised of silica glass, said optical fiber having:

5 a mode field diameter of 9  $\mu\text{m}$  or less at a wavelength of 1310 nm; and

a dispersion slope of 0.082  $\text{ps}/\text{nm}^2/\text{km}$  or less at a zero dispersion wavelength.

13. An optical fiber according to claim 12, wherein the dispersion slope at the zero dispersion wavelength is 0.080  $\text{ps}/\text{nm}^2/\text{km}$  or less.

14. An optical fiber according to claim 9 or 12, further having a transmission loss of 0.176 dB/km or less at a wavelength of 1550 nm.

15. An optical fiber according to claim 9 or 12, further having a transmission loss of 0.32 dB/km or less at the wavelength of 1310 nm, and an OH-related loss increase of 0.3 dB/km or less at a wavelength of 1380 nm.

16. An optical fiber according to claim 9 or 12, further having the zero dispersion wavelength of 1300 nm or more but 1324 nm or less.

17. An optical fiber according to any one of claims 1, 9, and 12, wherein said cladding region is doped with fluorine.

25 18. An optical fiber according to claim 17, wherein said core region contains no  $\text{GeO}_2$ .

19. An optical fiber according to any one of claims 1, 9, and 12, wherein said core region has an outer diameter of 7.5  $\mu\text{m}$  or more but 8.6  $\mu\text{m}$  or less, and

5 wherein a relative refractive index difference of said core region with respect to said cladding region is 0.36% or more but 0.42% or less.